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09/741,958	12/20/2000	Michael Neal	DEM1P001	7264

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EXAMINER
ROBINSON BOYCE, AKIBA K

ART UNIT	PAPER NUMBER
3639	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/741,958	NEAL ET AL.
	Examiner	Art Unit	
	Akiba K. Robinson-Boyce	3639	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 August 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-13</u> is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-13</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/3/05, 5/31/05</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Status of Claims

1.   Due to communications filed 8/29/05, the following is a final office action. Claims 1, 2, 4, 5 and 6 have been amended. Claims 1-13 are pending in this application and have been examined on the merits. The previous rejection has been withdrawn, and the following reflects the claims as amended. Claims 1-13 are rejected as follows.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641), and further in view of Ouimet et al (US 6,078,893).

As per claim 1, Ouimet '641 discloses:

an econometric engine for modeling sales as a function of price to create a sales model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price]);

a financial model engine for modeling costs to create a cost model, (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, (Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system

is computer-implemented and in order to create models, a module is necessary in a computerized system);

wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity, (Col. 2, lines 5-17, determining the promotional cost by determining both optimum prince and promotional activity, where the promotional cost represents the cost for each selected costing activity); and

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}]).

Ouimet '641 fails to disclose a configuration to receive variable costs and fixed costs, but does disclose a pricing module in col. 4, lines 52-53.

However, Ouimet '893 discloses:

configured to receive variable costs and fixed costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price).

Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that

market models can be represented by using values that change/are adjustable, and

also do not need to contain adjustable values.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to receive variable costs and fixed costs with the motivation of

creating both a fixed or variable market model.

As per claim 4, Ouimet '641 discloses:

creating a sales model, (Col. 4, lines 35-44, [demand model gives predicted

sales of an item based on price]);

creating a cost model, (col. 4, lines 52-53, [pricing model], which includes

activity-based costing, Col. 2, lines 1-12, including visibility, and taking the promotional

cost into account when modifying the demand model);

wherein said cost model determines a total cost for each product in a given

demand group in a given store for a given time period by computing a cost for each

selected costing activity, (Col. 2, lines 5-17, determining the promotional cost by

determining both optimum prince and promotional activity, where the promotional cost

represents the cost for each selected costing activity);

generating the preferred set of prices for the plurality of products based on the

sales model and cost model, (Col. 5, lines 45-48, [using fitted, modified demand model

to determine price that will maximize profits, {optimization}]).

Ouimet '641 fails to disclose the activity-based costing including fixed costs and

variable costs, but does disclose a pricing module in col. 4, lines 52-53.

However, Ouimet '893 discloses:

the activity-based costing including fixed costs and variable costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model.

4.   Claims 2, 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,094,641) as applied to claim1 above, and further in view of Ouimet et al (US 6,078,893), and further in view of Ouimet et al (US 6,308,162).

As per claim 2, Ouimet '641 discloses:

a price calculator connected to...the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on rule parameters, the sales model, and the cost model, (Col. 8, lines 18-20, [shows calculating], col. 5, lines 50-55 and 60-65, [see equations listed where calculating is done via the equations]);

Ouimet '641 fails to disclose further wherein said rule parameters constrain the

preferred set of prices to fall within limits conforming to business strategy, but does

disclose determining a preferred set of prices as disclosed above.

However, Ouimet '893 discloses:

further wherein said rule parameters constrain the preferred set of prices to fall

within limits conforming to business strategy, (Col. 1, lines 32-57, shows use of rule-

based approach, and using a model-based approach to affect pricing where tuning of a

demand model is done for fluctuations), Ouimet '893 discloses this limitation in an

analogous art for the purpose of showing that rules are implemented when determining

prices.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to use rule parameters to constrain the preferred set of prices to

fall within limits conforming to business strategy with the motivation of showing that

prices can be determined according to a set of rules.

Neither Ouimet '641 nor Ouimet '893 disclose a business rule tool, which stores

a plurality of rule parameters, but Ouimet '641 does disclose a routine in col. 6, lines 6-

8, where rules must be present in order to successfully process the routine.

However, Ouimet '162 discloses the following:

a business rule tool, which stores a plurality of rule parameters, (col. 1, lines 30-

34, [rule based approach]).   Ouimet '162 discloses this limitation in an analogous art for

the purpose of showing that rules are used in an approach to optimize models.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to utilize a rule tool with the motivation of going through the

process of optimizing models to determine prices in a logical manner.

As per claim 3, Ouimet '641 discloses:

further comprising a support tool connected to the optimization engine wherein

the support tool receives the preferred set of prices from the optimization engine and

provides a user interface to a client, wherein the user interface provides the preferred

set of prices to the client, (col. 6, lines 17-26, [provided with list], w/ Fig. 1, {102},

[display]).

As per claim 5, Ouimet '641 discloses:

creating a sales model...(Col. 4, lines 35-44, [demand model gives predicted

sales of an item based on price])

for modeling sales of each demand group for a given time period, (Col. 5, lines

24-31, shows a demand model for a promotional activity that was occurring at the time

of sale);

Ouimet '641 fails to disclose creating a plurality of demand groups, wherein each

demand group is a set of at least one product and wherein at least one of the demand

groups is a set of at least two products, but does disclose utilizing demand models to

predict prices in the abstract, lines 1-5.

However, Ouimet '893 discloses creating a plurality of demand groups, wherein

each demand group is a set of at least one product and wherein at least one of the

demand groups is a set of at least two products, (col. 8, lines 29-35, [selecting demand

model by breaking up a retailer's market into smaller groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that groups are used to determine demand.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a plurality of demand groups with the motivation of optimizing models according to categories.

Ouimet '641 fails to disclose creating a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period, but does disclose the utilization of a demand model to optimize prices.

However, Ouimet '893 discloses:

creating a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period, (col. 8, lines 35-37, [maximize market share by using demand model by breaking up market into smaller well-defined groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market share can be modeled and maximized by using the demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period with the motivation of determining market shares according to categories.

Ouimet '641 fails to disclose modeling sales for a given store, but does disclose

the utilization of a demand model to optimize prices.

However, Ouimet '162 discloses:

Modeling sales for a given store, (col. 10, lines 34-39, using demand model to

find price image of other stores compared to their store). Ouimet '162 discloses this

limitation in analogous art for the purpose of showing that sales each store can have

their own sales model.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to model sales for a given store for the purpose of determining

sales information for that given store.

5.   Claims 6, 7, 8, 10, 11, 12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ouimet et al (US 6,094,641) and further in view of Hartman et al

(6,725,208).

As per claim 6, Ouimet et al '641 discloses:

an econometric engine for modeling sales as a function of price to create a sales

model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on

price]);

a financial model engine for modeling costs to create a cost model, (col. 4, lines

52-53, [pricing model], which includes an activity-based costing module, Col. 2, lines 1-

12, including visibility, and taking the promotional cost into account when modifying the

demand model, in this case, the module is inherent with Ouimet since Ouimet's system

is computer-implemented and in order to create models, a module is necessary in a computerized system); and

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}]).

Ouimet et al '641 fails to disclose based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, , but does disclose utilizing demand models to optimize prices in the abstract, lines 1-5.

However, Hartman et al discloses:

Based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, (Abstract, lines 1-4, shows Bayesian modeling used for optimization, and col. 8, line 62-col. 9, line 3, utilizing the weighted average of multiple models). Hartman et al discloses this limitation in an analogous art for the purpose of show in that Bayesian modeling can be used to determine optimal prices.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize Bayesian modeling wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, with the motivation of processing a particular optimization technique to determine prices.

As per claims 7 and 8, Ouimet et al '641 fails to disclose wherein the Bayesian model is a Bayesian Shrinkage model or where the Bayesian Shrinkage model is a multi-stage model, but does disclose utilizing demand models to optimize prices in the abstract, lines 1-5.

Official notice is taken that it is old and well known in the art for Bayesian models to be Bayesian Shrinkage models and for the Bayesian Shrinkage models to be multi-stage models. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the Bayesian models to be Bayesian Shrinkage models and for the Bayesian Shrinkage models to be multi-stage models with the motivation of using these types of models to effectively come up with optimization results through a step-by-step process.

As per claim 10, Ouimet et al '641 discloses:

wherein the market conditions include a price point, (col. 7, lines 44-48, [price point]).

As per claim 11, Ouimet et al '641 fails to disclose wherein the econometric engine divides the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5.

However, Ouimet '893 discloses divides the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group, (col. 8, lines 29-35, [selecting demand

model by breaking up a retailer's market into smaller groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that groups are used to determine demand.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to divide the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group with the motivation of optimizing models according to categories.

As per claim 12, Ouimet et al '641 fails to disclose wherein the econometric engine generates a market share model for said products in said demand groups, but does disclose the utilization of a demand model to optimize prices.

However, Ouimet '893 discloses:

wherein the econometric engine generates a market share model for said products in said demand group, (col. 8, lines 35-37, [maximize market share by using demand model]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market share can be modeled and maximized by using the demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to generate a market share model for said products in said demand group with the motivation of determining market shares according to categories.

6.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et

al (US 6,094,641) and further in view of Hartman et al (6,725,208), and further in view of

Ouimet et al (US 6,078,893).

As per claim 9, neither Ouimet et al '641 nor Hartman et al disclose wherein the

econometric engine provides demand coefficients to the optimization engine, the

demand coefficients used for estimating demand given market conditions, but Ouimet et

al '641 does disclose using demand models to create optimized outputs in the abstract,

lines 1-17.

However, Ouimet et al '893 discloses:

wherein the econometric engine provides demand coefficients to the optimization

engine, the demand coefficients used for estimating demand given market conditions,

(Col. 13, lines 49-55, [item-specific coefficients]). Ouimet et al '893 discloses this

limitation in an analogous art for the purpose of showing that coefficients for specific

items can be used to optimized prices.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to provide demand coefficients to the optimization engine, the

demand coefficients used for estimating demand given market conditions with the

motivation of utilizing coefficients to convert optimized figures according to certain

conditions.

7.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet

et al (US 6,094,641) as applied to claim 6 above, and further in view of Hartman et al

(6,725,208), and further in view of Ouimet et al (6,308,162).

        As per claim 13, neither Ouimet et al '641 not Hartman et al disclose As per claim

13, Ouimet et al '641 fails to disclose wherein the econometric engine determines a

sales model for each demand group so that the optimization engine is able to calculate

demand for said products by multiplying the market share model for said products with

the sales model for the demand group to which the product belongs, but does disclose

determining an optimized model in the abstract, lines 16-17.

        However, Ouimet et al '162 discloses:

        As per claim 13, Ouimet et al '641 fails to disclose wherein the econometric

engine determines a sales model for each demand group so that the optimization

engine is able to calculate demand for said products by multiplying the market share

model for said products with the sales model for the demand group to which the product

belongs, (col. 2, lines 15-17, [shown that the primary objective function is combined with

the constraint function and multiplied by a weighing factor, resulting in an optimized

objective function, w/ Col. 4, lines 2-14, [shows that market share is the primary

objective function and is multiplied by a factor to get maximized gross profits, in this

case, this calculation is analogous to multiplying in the claim limitation since they both

yield an optimized result]). Ouimet et al '162 discloses this limitation in an analogous art

for the purpose of using a multiplication factor to yield optimized results.

It would have been obvious to one of ordinary skill in the art tat the time of the

applicant's invention to determine a sales model for each demand group so that the

optimization engine is able to calculate demand for said products by multiplying the

market share model for said products with the sales model for the demand group to

which the product belongs with the motivation of determining an optimized solution.

Response to Arguments

8.   Applicant's arguments filed 8/29/05 have been fully considered but they are not

persuasive.

As per claims 1-13, the applicant basically argues that as amended, prior art

used does not disclose the limitations of the present claims. However, upon further

review of prior art, the examiner has updated rejections accordingly as described above

in preceding paragraphs. Prior art used in the previous rejection has been maintained

by the examiner.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
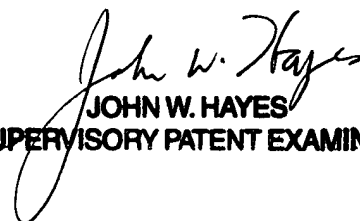
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 571-272-6734. The examiner can normally be reached on Monday-Tuesday 8:30am-5pm, and Wednesday, 8:30 am-12:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7238 [After final communications, labeled "Box AF"], 703-746-7239 [Official Communications], and 703-746-7150 [Informal/Draft Communications, labeled "PROPOSED" or "DRAFT"].

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

JOHN W. HAYES
SUPERVISORY PATENT EXAMINER

A. R. B.
November 1, 2005